Contribution ID: **3** Type: **not specified**

Positronium imaging with modular J-PET for medical diagnostics and basic research in physics

Wednesday 26 April 2023 10:50 (50 minutes)

The Jagiellonian Positron Emission Tomograph (J-PET) is the first PET scanner based on plastic scintillators. It is designed to measure momentum vectors and the polarization of photons originating from the decays of positronium.
In combination with the newly invented positronium imaging method, J-PET enables the study of discrete symmetries in positronium without the use of magnetic fields. We will present the latest results of P, T, CP, and CPT symmetry studies with the J-PET detector (Nature Communication 12, 5658 (2021)) as well as explain the method of positronium imaging that enables imaging of positronium properties in living organisms (Science Advances 7, eabh4394 (2021), Nature Reviews Physics 1, 527 (2019)). In the talk, the method of positronium imaging in living organisms and the first in-vivo positronium images of humans obtained with the J-PET tomograph will be also presented and explained.

Presenter: MOSKAL, Pawel

Session Classification: Positronium in fundamental investigations

Track Classification: Positronium in fundamental research